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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,160	01/11/2006	Hiroyuki Sugihara	283034US3XPCT	6119
22850	7590	05/09/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER FORD, JOHN K	
			ART UNIT 3744	PAPER NUMBER
			NOTIFICATION DATE 05/09/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary**Application No.**

10/564,160

Applicant(s)

SUGIHARA ET AL.

Examiner

John K. Ford

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

Applicant's response of 15 February 2008 has been carefully considered. A discussion of applicant's remarks is incorporated into the rejections that follow.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-45884 (cited by applicant and assigned to the current assignee, Hino) in view of JP 61-3999.

JP '884 shows all of the claimed subject matter except that the water feed holes 15 do not appear to have "gradually reduced diameters" as the holes are farther peripherally spaced apart from the connection between the water supply chamber 14 and the inlet pipe 4. JP 61-3999 teaches holes (admittedly, rectangular holes, however applicant's claims are silent on the shape of the hole) that have "gradually reduced diameters" as the holes are farther peripherally spaced apart from the connection between the water supply chamber 8 and the inlet pipe 1. To have made the water feed holes of JP '884 to have "gradually reduced diameters" as the holes are farther peripherally spaced apart from the connection between the water supply chamber 14 and the inlet pipe 4 would have been obvious to one of ordinary skill in the art to

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advantageously improve fluid flow through the heat exchanger shell by reducing the likelihood of any pockets of stagnated water in the shell.

Regarding applicant's remarks in applicant's response of 15 February 2008, the examiner addresses them below in the order presented by applicant.

The EGR cooler of JP '884 extend horizontally for exactly the same reasons that applicant has used to justify that his own EGR cooler extends horizontally and is respectfully considered to be well known to the engineers at Hino.

JP '999 is shown in a vertical orientation but, with respect to the relevant teaching of holes that have "gradually reduced diameters" as the holes are farther peripherally spaced apart from the connection between the water supply chamber 8 and the inlet pipe 1, counsel has failed to demonstrate with any objective evidence (test results etc) that the relevant teaching would not be equally applicable to a horizontally arranged heat exchanger.

Applicant states at the top of page 6 of applicant's response of 15 February 2008 that he is claiming both a source of exhaust gas and a source of coolant in addition to the heat exchanger, *per se*. It is submitted that those sources must inherently exist in JP '884 or it could not function to cool exhaust gas. Furthermore the water supply chamber 14 and the inlet pipe 4 of JP '884 are clearly at one end and the water outlet

chamber 16 and water outlet pipe 5 of JP '884 are clearly at the other end. The fact that the inlet 1 in JP 61-3999 is axially offset from holes 4 is not seen as diminishing its significance as a teaching reference for using holes that have "gradually reduced diameters" as the holes are farther peripherally spaced apart from the connection between the water supply chamber 8 and the inlet pipe 1. The water supply chamber 8 in JP '999 simply happens to be bigger than the one applicant uses but it still extends all the way to the axial end of the heat exchanger where the holes that have "gradually reduced diameters" as the holes are farther peripherally spaced apart from the connection between the water supply chamber 8 and the inlet pipe are located.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-45884 in view of JP 61-3999 as applied to claims 1 and 3 above, and further in view of JP 56-82383 (Figure 2) or applicant cited JP Utility Model 61-43694 (Figure 3).

Each of these references, taken individually, teaches offsetting the first two holes in the shell from a position directly aligned with the inlet. To have done this in JP '884 so that the flow moves around the water supply chamber 14 evenly would have been obvious to one of ordinary skill in the art as taught by JP 56-82383 (Figure 2) or applicant cited JP Utility Model 61-43694 (Figure 3).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Ford whose telephone number is 571-272-4911. The examiner can normally be reached on Mon.-Fri. 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John K. Ford/
Primary Examiner, Art Unit 3744